

## SEQUENCE LISTING

SEQ ID NO.1

5    tttttttttttttacaaaatatcattttattctttaattggaaaaaggcattaatattcaaacaaagggaatcacattttaataacccctatagataagaaacaggc  
tccaggaacattcaagcagcagtgatcaggggaaaaatgtttcaatagcccagttttctca

SEQ ID No.2

10    ttttttttttttccaacttaacggttttttaatttagaataataattttaacacaaaagcagtcattttattcagcaaaaataatttaacaaagtcatttaataaagg  
     taaattctagactctgaacttttttttcttagctacttgcttttctgcccttggaatccaagctgctatactagggtgcttccaaggtaacacagcgtgaagg  
     gaagggaactgttcattcattcatatataatatatatatatatatatatatatataatttgaatgactcaaatacaccacagttctattcaaccaccagtg  
     gttagtgaagcagaaggaggaggacacagggga

15      SEQ ID No. 3

tttttttttttggacatgaagtggtttataggaagaacactccaagcactcacaatggcttcacaacacttagcctaggctggaacacaaaagga  
tatcacaacagagtcattgggtttacttgcttatcatcaccaaagaatgttcattggcagtttaatttcaggctgtaaaaactacatctatggcaccaacatgg

20      SEQ ID No.4

alatttaacicaaggcagaggaaagattatcccgactaataatccattcagctgatgaatacttgattattagagagcagctccaataagcagcttaagt  
tccgtattcattttaacatcagctgcattaccttcaatatggtaaaagatgtttttcagttgaatgggtcatatttgggtcagctgtttgatgtcacaaaaaatgt  
tacaataataaactaacata

SEQ ID No.5

30 gaaggcaagatcatttgcattttttaaaagtaaacagctgttaagatagaaggcgatgtttctttattgtaaaacacagcagttacaaaagagttac  
aagttaacagtc aaataaataatgacattaa gaattttgtttgtttgttaaaaaatacaacccccctcccaggatttgtgagaagtc ccaaga aaact  
caagatacaaaaatctgtctcatggcgagaatacatttctttagcttcttggaaactgnttgcagacacgggaatttggatcatttcaaaaaga

SEQ ID No.6

35 ttttttttttttttggntttatcacattattgtttacatttttaatttttttgcagtaalagagggcacaaacacctctgtcttccatcactgcacaagaaa  
ggacaatagtcagggttaacagtgaattaaaaaaaaaaaaaaaaatacaaacgcctaagggtctggagaacctgactacaattctacgttggaagaaact  
tgtaaatgactccagcgtgtgtctccgattgcaccacttcacagaccacagaggagggtgtccacagagaaggacacagccaggctcagctgccca  
gggtggtggcctctgccatccacctgcgttctgcacagtagctcaagttcacatttcttactcacactgctgccttctggttttcaagtgactggtacaa  
acgtgtcttccctgtgccg

40      SEQ ID No.7

gtggcaacacaggaaactcagagaccttggtttattagattatttaatatgccagaccaatagaaaggagagcagcacacaggaaacacctgtgttg  
caggacagaggcagatgtccacagccttgggcacatgtatctctgtgtaattggcaaatgaatacttaataaccacacaaccgccagacttggg  
gtggggagaatacagggccacaggggacatgtttaaaggcagtcagaggctttaataacaggggctgaaccttctactttatacaaaaacttataatata  
aaagttaaggataccacggtatatacatcagaacagcttgggtgggagaaaatgaccaaggagggtggagcctgaataaggaaaggcctgccataat  
gtctatctttcatcttcacaaagtccacttggattatagaataaatcagctggcttcagatgaattatgaaagtgcttggtgtgtcttaagtgtctaaan  
gccnccgtngcagggaaggcnccttttcagatagataagaaacctggaaggaaacagctggactgattgtgggtgact

SEQ ID No.8

ttatttgatcatttaatatgcagggtcaatggaaagggaaggacagagcacacaggaacacctgtatttcaggacggagggcagatgtccacagccttg  
ggcatgcatgtatctctgtgtaattaggcaataataacttaataaccacagcacagccagacttgggggtgggggggaalcacaggccacaggggac  
catgccttaag

## 55 SEO ID No.9

taataaagaagctcaagatctgtggagctgtgataggcagcctattttagtgaatgggctgtctgtggtgacccaatagagaacttacaaggatgaa  
aggtgagccatattcccagaatcaggagcctgtccataattctgttactacagtcgtgcagacaatgtcccaagcttctggcattctggtatgccacc  
ccacagccacctgactatagctcactataaggagggtctgtggccctctctgctctttagccctcagggtttcttactctctagcctctctctctctct  
ctctctctccctccccatctctccacatggccatgctgtgtttctctcttctacctcttctctctctctctctctctctctctctctctctct  
ctgtctgtgatcatgaaggctcccatctgtgaactgccatgctgttctctctcttaaggagccgagcttcaacctccccaccagaaggccatctgtgctcc  
agccacagacagtcaccaagcactctgccgagctgggaacatccagctccctccccagccctctctctctctctctctctctctctctctctctct  
ccgggcccctatctgtctctgttctctgtgtatccagcctgggatgtcggaggccgagaatctgtgacctggggctgccccctgtctaccaccgcgtgt  
gtgggggtagtgtgcttctacagcagacaccaccggggggcgtgtggaagcgtgacacgtctctctccgaccaccgcccagagcactggatctct  
ggcgggacacgtgtgtctctccactccctcttccccacatccacagccctgcaaaagatcaggcttgcagacacacactgtgtcttttggcgttgcgt  
aagcaatgatcaaccaccacccgctgttctctgtggccagctctcttttagctgttgcagacaaagtccaagacgacgaaaaattcatgctgtgagc  
actgaagaagaagggttggctataagggttctctctcactacagaattgtccaggattatgtccagggtgtgagcgtgagacacgcccgttaaggactgal  
ggcaggtccatctacggagagaatctgaggatgacaattcatctgaagcatcaggctctgctgacttctgctatggcaatgtgtgtgacccaacaa  
atgggtccacgtttttatctgcactgccaaagactgaatggctcgtatggcaagcatttggcttggaaagggtgaaagaaggcaatgaacatttgcgaagc  
atggaagcgttttgggttcaagaatggcaagaccagaagaagatcaccatttgcactgtggacaagtcaatttctttgacttctgggcatttaccatca  
aacattcttctgtgtactcataagaacacccctccccctgtctcctaatgtctgtaatctgtctctcactgaagttcttgggtccatatttctctatcc  
ccttaagtcttactgtgattgtccaaagtgaagcttatgattatgaataaaactataaagaaaaaaacgaatgacttattgattaaatataaactata  
agggtaccattaaactaaattcaatttatgttcttaagatgtataaaaaaagggtgatatcttgaatttttggtaaaccaagaagaaaaaataaata  
aaaaaggatttttgcataaaacacatattcccaagtgacttatctaaaaatatacaagaatatgtatatagcacagcaaaagggaataaaaccccc  
actttaaagtgaagaaatattcatagctcactgcatgaacggtattcaaaaccagaaaaacacattaaaaaattgtcactgtcttatgtatgaggggaa  
tgcaaatgttcttggtaagggttgcgttccaagagatcctttgagaacagtgtgtgtagctgtgctgtaaaagatcaggcaagccagaagtgtctacatt  
tagcagctgttctgtgtgctgtgggtgtggggagatgactgtaaaactgtgggaagcaaatgactgaagtctttagcgaactgtctattgtgaggaatacc  
attagaacggagcggcaggttltgtgtatgtatcccaaggggtgtgacagctgtcatgtgttagcagctgtgaagccacacagtgtgagggagctgt  
gggtttacgataaacaggtagtctgccatccagctagcacagcactaggctaaagcgtactgagccctgtctctctggggagctgcagagtgggatgc  
atgcgtttagagctgagctcaagctgcgtgcgcaagaagagcaggggtgctctgtcagacgtccagggctcttctctctgagcgtgggaagtgcacc  
ttattggactataaaagccggggggggggggggggaggaaatcgaagtgaaagggaatgcacaccccttaacgoccttattagaaccttcca  
ctattctctcactatgttacctgagctggcagcgtatagctgaagttcttgcacacccctctagcttctctcttgggtatgcaagctcatattta  
ggtagatgtgaccttaggaacaaaaatctttaaagtacttactaaactgttggctgttgcactgttccatgactctgtgccccctgaggaagtga  
ggaaaaaattctctcttgttctcctaactattaagaatttlaagggcacttgaagggttcttccccattctgtctgttctgtagacttctgagaacacact  
gtgtttgtgtgagagtgtgctccctgactacactgtctgcacattgatgtctgtgtagtaggacaggggttcatctaggaatatatttactcacactctgtat  
ctttctctatgttggctcatattctgtcgtctgttgaataataaaagaaaactaaaacaccccttcagacgcctatgtctgaaaaatttgcgcattt  
ctgtgtgttctttaaaggagctcttattgttaaccaaacacatgctctctttaaagaaatcactaaactgacccattacttcttcttctcccgattt  
gaggctgcagtgccctttttttcttccccctgctgaacctgaaaaacccctctcttctcactagtttctgttccagccccctgacttcttttagagacttg  
gggggggggggggagcaggattgtgatgtgtgaactggggaggtcttgacctactccgctaaccagtggtccctgagcaaatcacaaggaggattggagc  
catctgccagccccctccccacggcagcctgtctgaaagagacaaagtgtatcattcaaatgattgttggccgtcttctcttaataaagaaggcag  
cagcttctctgtgaggtgcaagggttttgaattacagcgtgtgtgtggaagaccgagttcctccagttcctgctatttccagctgactaggcgttaagga  
tgtagatgttcttctgcgaaccttgcgaagctgcagacagctgaattgttagtactgaagaagcttgggttagtaaaaaaagacgtactgttttctgt  
taacttctgtatttgaiccttagaaacccccgattttactaccagtttctgaaagacagcgttgagcacattgtgtcaatttactaactagactgtcatgaccca  
ctcaataattcttactgtggtatttcttgccttcttgcgaagaatcaataaaaggaccatttgaatcctgtgataatgtgaagcttctgtaacttttgaga  
aggagtgagaaggctcctatttgtcttactcctgtccatgtgtgtagtaaaccaatcaaggttgagcaaatctacattgaatccaattctggatt  
cttagatgacaaagcagatttctgaactatttggaggtgtctgttaactgcgtgccttctgttaccggctgggcttggcatttggccactggcaagtggga  
aacgtgaaccaaaccaactgtgatttactagtcagaggttggcaaggtgtgatccggacacatgcagcaatcagaacagagatcaatttccagctgt  
ggagaagagttagaagaaccgcatagatgacagaaactgaaggttaagaggcagctttatccggtgaggatggagacagagattccaatcttcca  
cagacatggagaagggggaacaagcttcagaaatcccccttcagggaagaaggagccagagctaacttctaggggttactgggtgtatccccagacactga  
gtaatttccagagccaacttgcaggctatttatctttttacattttatgaacttttaccagagagtattgaaccatgtttattgaaagaaagaccacac  
ctgttctcttctctgtatcaltcagcttgaccaattgtccgtgcacagcaaaagtgttgcataagcaagaagagtgtactgttctgtatttatttctgtacta  
tctgtgttcttcaactgtctgtatcatctggcagctgaattcataaattggccacttttagaaacagagatttgaagtagaacagaggtatgaagtgtctgt  
ggaaataattagtgatgtatcagttatggccctctctgataatgtctgtctgttgcacttctgaaaggtggacitctcgttgaaccccttctgtgtgtt  
tgctctcagctgtgtgttgcgttggatggagacaagctcattcatgtgcagaagtgggattggcaagaagaacaaattgtaccagagaataaaggatggca  
agatgtgtcgtgtgaagcttaaggagctgccttcttcttccctcttaagcatcatttcttgcactccccctgtgacttcttcttctttagccccact  
tttctctcccccaaccccttatttctatcagcttctctcgtcccttcttccatcttaataatgaacacggggaagggaanaaactcagaactgaagaagc  
ctcaggttggcgcactgtagatttttaaaattatcatcaatttctccccaaaagtgtgtgcaagaccgttgatggagctgtgtgattgtccagcttcaat  
ctggaacttaaatgtgaagctactcttaggaaaaatttgaagataactcatgaaaaactaaagtaaacgaataatcagtagtgtacttaactatagactgt  
aattaaaggcattttaaacattttaattttgattataagagctcagtgcaataattttaacaaaagggtgaagctttaaatttttactagatctgtttagtactccc  
ttacagttgttttcatatttaataatgaatcagtaagtttcaagatatgtccagtcagcagctagccatataaatctctaagatagaataaattttataaataattc  
ctctatgatgaagtttagcccttgactagacgtttagagacaattttaaaaataaagaatatttagatgatagtatgtgaagtgttatttatttctgtgagg  
atcttgggttcttcttcaaacactctgtaaggattttctagcttgccttcttgccttctgtctgtgtagcagaataggatgtctcattcttactatcagact  
cagaactattctgtacttaatacacttctctacatgataagtttggagcagggagcagagatttttctgtaataactcaacaaagaaaagattcattct

5 taacaattatcctaaagtattctttatgagtagccttgattccttctgtttatataaaagctagagcaagctcatcttagaatacctgactgtggtcaggcaa  
gactgagttctgcaagaactcagattacagaaaaggcatactgaattctgaggggttaccatgcttggaaagctctgggtatataaaccttaatacttttttga  
gtaattctcactttcagagtaagagcatcaaaatcagtgccctgccacctaagcatctagattatgttcacatgagctaaacatgacagctcaaatgtagag  
agaacaccgtactggcatgctctgctgagcttaaaataagtcactcctgataccatgagctcaaaagccttgattttctaaagaacccatcaggattgtgg  
10 atagaaaactgttatgaaaatctatgaaaatcgaaaatcccttcaaaagcagacaattgaggccacagtgacatgatcgcttttcttgatccaatttctctg  
gttcccttagcaattttacaggaaaggaaatttttaaacatagtttccaatcagtttacttcttcttcatcttaaaatgaataagatgagcatgcttttca  
ttattaacatgagcatctttttgttgtaggaacaatgaatatgcaacatttaattgcttgcctatgctcctatcttggcttaattttaagcatataaatg  
acaattgttaaaatitcagcagtgaaatggtctgagtaaaacgattcaatttcttggactatttcagactcttacccttgggatactggtgctgtcgtgttat  
15 gaaaaggcatagaagagatgacaggacttttgacaactgttcttccgagtgccagagtgagccagctaatgaagcactgctcactaataaagtgtgtct  
tcggtgtgaggtagaaaattataatctlaagatgtgttactccaagcaattcatgggattttgatagcaaaattactgttttccatttttttaataatttacaat  
actttttatagaatgggaatacttatgactttcttgggaatgcaaaccaaatgaaaataaaatacacacacatatgatactggtgtctattttaataccg  
tcaacttatctgaattttccatacagtagcctttcttatagcataaagtaaggctggaaaaaagcttctgtatctgtataaagatactcattcataagtagcttgat  
gacccagaaaaatagggagatgccacatatgtgagactatgtagaagcaactggaattagtaagttcatctgctcaggacctaaggaagtggttatagta  
gactacaaaaatgatctttgtctataaaaacagtataaaggaaaaaaaacaggcttcaacatgtgaccacaggtataataatacaagtgccatggaatca  
20 cagtgcatttatcaaaagtattatagcaaaagacaattgaaaaaagaagcaatttatctccactcttagcacgagcttccaacactgcactacactgaac  
tttacaaggtcaagaatggtacaaatgaagcctatacagagaatccatgaaaatgttccaattccactttttcaggggtaggaagaacaggttaattagaac  
agagct

SEQ ID No.10

20 MVDAFCATWKLTD SQNFDEYMKALGVGFATRQVGNVTKPTV IISQEGGKVVIRTQCTFKNTEI  
NFQLGEEFEETSIDDRNCKSVVRLDGDGLH VQKWDGKETNCTREIKDGMVVTLTFGDIVAVR  
CYKA

SEQ ID No.11

30 agcacagtgctgccctccgttaggctccgggtgtgtgctgggtgaggttgggtgggtggccggcggtgctggaactcgggagctggacctagcag  
gcttacagttcctcctagcatgaccgagatctgatcagccaacccggcagttgcttttggcctggcactgcagtgacgggggctcttcatcgcccaaaa  
ctacagcactgtcatggcagctgcttacttccagccctgtaatttcacagcccaagttcacagccatgaacgaacaacagtgcttctacaatgagctat  
cgcttcttttataaccggagtgaggaaatctagccacagaatgaacacagtgagcaagctgggtgagggactgggcatcactgttgcgtgtcatcat  
gttggcacaatcctggtcatggtggcaatctacgtcaaccgccgttccattccctatttattcttgatggccaacctggctgctgcagacttctcgtctg  
attggcctacttctacatgatgtcaatacaggacctaataccggagactgactgttaacacgtggctcctccggcagggccttattgacaccagccctga  
cagctctgtggccaacctgctggtattgtctatcagagggcacatcaggttttccgcatcagctccatacagaatgagcaaccggcgctggtggt  
gggtgattgtatgtctgactatggcactatggcactgtgaggtgctatgccactgtgggctggaactgcactgtgatatcgtatcactgttccaacatggcacc  
35 ctctacagtgactcctacttagtcttctggccatttcaacctggtagcttttgggtcatgggttctctacgctcacatcttggctattgttcgccagagga  
ctatgaggatgtctggcatagttctggaccaggaggaatcgggacacatgatgaccccttgaagactgtggtcattgtgcttgggtgcttattgtctg  
ctggactcgggattgttctgttattgtggtatgtgctgctgcccagctgcatgtcttggcctatgagaagtttcttccctcctggcaggttcaactctg  
ctatgaacccatcatctactcctaccgcgacaaagagatgagcgccaccttcaggcagatcctgtgttggcagcgcaacaggaacccataatggcccca  
cgggaaggctctgaccgctctgctcctcctcccaaccacacattctggtgagttcacagcaacgaccactctgtgttgaaggaagcagccggcct  
40 ctgtggatctgtgaacccaccctaccctccattgccaggcgaaggtggggagccagaggagatgaggacactcctgtacttaacactaaccatggc  
aglatittgtccctagaccaagagacttgaggatgaattatttggcaggcccatcttctcttggaaaaacagaaggggaccgtcttgggtggaattgag  
aaatggactctggggtagccgtgtagcaattcaactagacttaaaagattttatgtgttggcttaaggccaggaaaaaaatctgtaattgagata  
caatcgatatacagggcttccctttaaagaacaacaatacattgcattttaatgagtagttatgcctgacagcatgtttgtatgaaaaagactgct  
45 gtgtgtgtattcagtagccttctttaaagataaaaggccactattttaaacttctagggaaatagaagaatctagtaaaaccagatattcatttaggctacagg  
aaaaaccatctcctaatcaattaccctttaaataaagtaaatgaatatacatgaaaggcaaaagtaattgtgagcttgcacccaagagtgctgtcttcaaac  
gctggaggagatgaagctgtgagctgttccctgcatagtgaaagataccacgtgctgtctcagtgccagaccctcagtgaggactgtttaaagcctgtggt  
tttccaaagttagaaaataatcacttactatagaaaacttgaaattcgagaactgtgtgaaaaagaaaaagaaagagattgctgatatagacact  
50 ggaagtagccatcttccctgctcaccacgtatgcttatagacatataatatacctttttttttacataatcgggttgatattgtaaaatgtttgtactttt  
cttcagaattgccaggtttttctatgacatttttttcaaaacgttagcggtatataatattccatttaaggatgcagctcagttatttagtaccattcctgtatt  
gtgactatgctttgtttttttcataatattggaagaatctgtgtatataaaactttccagtatcattgatgttacttgggtcctattccatgaaggacct  
acttttaaatgtgaaatgtcctcatgtgtgtgacatttataaaaaaggatatttccctcaaacctgcaggggtgaccatgctgacaaaaagctcagaaatla  
cctttttacaaaaaagacagctggctacttttagtgcgaatgggttcttgacaagatgttcccaataaccagacccttaacataactagcaaatattcctta  
55 tagggaactgtgtatcccttctggacacaagaacacacaaagacatcaagcatcagtgatgaatccagcaatgcagtaaccaagcagcctgggtgggt  
gtctagcaactggctgtgtgtgtgtctccagcaatcaccacccctgtgtcagagatgccagtagcagtgctcctggagactaaggctccta  
gtcatgtatgaggaacaaggagggaagaagaatgtcctgaagcagggtgtgagagggtcaggaggacgtctgagagaaggcagctcctgccaagagt  
ggcattctagggaggagggaaggcagggtgtggtgtgtgtgacagtcagtgtaggcatgtgacatttgcctgggtgaaaaaaaataagtaggcgga

gattccagtttagcaggacaaagattttgctcaggattcccccaatccaagaaatttaactggaaatgagtaaccgaacttgacttttattgattccccctt  
tatgggggaggttaaggactatttgaattgaaaagcatalactaattgaaccttaataatcattctcaatcagtggttgccgatgtgtggttctgtctgtctttt  
tctatttgcagaagcctctggctgtgtgtgaggttctctctgaccttcttaacagctcagggcagcccaactgttctttagctcagatactggtt  
cctcatccatgagattcatgagagacgtgttacctcaatggaatgagtagagcaaggatatttagagagattttttattattatttttgaataaaat  
5 gtagtataaataagataaaataaa

SEQ ID No.12

MAAASTSSPVISQPQFTAMNEQQCFYNESIAFFYNRSGKYLATEWNTVSKLVMGLGITVCVFIM  
10 LANLLVMVAIYVNRFRHFPIYYLMANLAAADFFAGLAYFYLMFNTGPNTRRLTVNTWLLRQGLI  
DTSLTASVANLLAIAIERHITVFRMQLHTRMSNRRVVVVVIVWTMAIVMGAMPTVGWNCICDI  
DHCSNMAPLYSDSYLVFWAIFNLVTFVVMVVLVYAHIFGYVRQRTMRMSRHSNGPRNRDMM  
SLLKTVVIVLGAFTVCWTPGLVLLLDVCCPQCDVLAYEKFFLLAEFNSAMNPITYSYRDKEMS  
15 ATRQILCCQRNENPNPGPTEGSDRSASSLNHTILAGVHSNDHSVV

SEQ ID No.13

cccagagataagctgacgtgggcaaacccctgggggaagggtgctcgggcaagtagtcatggtgaagcagtggaatcgataaagacaaacca  
20 aggagcggtcaccgtggcagtgaaatgttgaaagatgaccacagagaaggacgtgtctgatctggtatcagagatggagatgatgaagatgattg  
ggaacataagaacattatcaacctcctggggcctgcacgcaggtggaacctctctacgtcatagttgaatgatcatcgaaggcaacctccgggaata  
cctccgagccggagggccacctggcatggagtactcctatgacattacacctgtgtcccgaggagcagatgaccttcaaggacttggtctcctgcacct  
ccagctggctagaggcatggagtactgtgcttccaaaaatgtatccatcagagatttggtgccaagaacgtgtgttaacagaaaacaatgtgatgaag  
25 atagcagactttggcctggccaggatatacaacatagactactataaaaagaccacaaatggcgacttccagtgcaagtggtggtcctgaagcc  
cttttgatagagtttactatcagagcgtgtctgtccttcggggtgtaattgtggagatcttactttaggggctcacctaccaggaggattcccggt  
ggaggaacttttaagctgctcaaaaggagacacaggatggacaagcccacaaatgcacaaatgaactgtacatgatgatgaggattgctggcatgc  
tgtaccttcacagagaccacattcaagcagttgtcgaagacttgatcgaattctgactctcacaaccaatgaggaacttgatctcaccagcctct  
cgaacagtattctcctgattaccccgacacaaagtagctcttgttctcaggggagcattctgtgttttccagaccccatgcttatgaacctgtctgctca  
30 gtagtccacataaacggcagtgtaaaacatga

SEQ ID No.14

PRDKLTLGKPLGEGCFGQVVMMAEAVGIDKDKPKEAVTVAVKMLKDDATEKDLSDLVSEMEM  
MKMIGKHKNIINLLGACTQDGPLYVIVEYASKGNLREYLRARRPPGMEYSYDINRVPEEQMTFK  
35 DLVSCTYQLARGMEYLASQKCIHRDLAARNVLVTENNVMKIADFGLARDINNIDYYKKTNGR  
LPVKWMAPEALFDRVYTHQSDVWSFGVLMWEIFTLGGSPYPGIPVEELFKLLKEGHRMDKPTN  
CTNELYMMMRDCWHA VPSQRPTFKQLVEDLDRILTLTNEEYLDLTQPLEQYSPSYPTDSSCS  
SGDDSVFSPDMPYEPCLPQYPHINGSVKT

40

SEQ ID No.15

ctcagctctcacggcgtgcaccatgagcggcgccgaagtgtttgctcggatggctccgcaagtcgccccggagaagaagtgaagcgttatgcg  
tggaagagaagggtgtgtgtgtgcagtgccgtttgactggagaccggatgtcctggagtattacaaaacgatcatgccagaagcctattcggat  
45 tattgattaaattatgicagaagtgtgctgggttgacattcaacaaaaggagttgaaaacagctatatcttgatataacaccatcgaccggattt  
tacttggtgcagatagtgaggaagacatgaacaagtgggtcgtgtatctgtgacatctgttgattcaatccacagaagaagatcctgtgaagccgct  
gactggctctcacaagcaccgtcgattcaccttgcctataagtacagcaccagcctccagtcagatggaagcttctcagtcgcgtacctcctctta  
ccaggtcatcagccttccgccacaccagacacccctggcctccaggacgatccacaagactaccttctgtgatcaactgtcaaaagcaagaagcctga  
50 acacaggaaatgaatgcttttgacgaacaaatgtagtactgcccaccgtcccggctgacatctgtctcgggagagtgccagcctctataacgtccccc  
aggagctattccatgacgtgtgtccaaaggaaatcccatcaagcacggagccgacggggagcgtgtacaccttaacaccccatctgggactgcaggt  
gtagaacgcagatgagacatgtatccatcagtgacattccgccacacctggcacaactaccagatccacggacatttccagaagcacactg  
ggacagtcataaagctggacacattcctgatatccccccacctggccaccaaagccacatccaagtcagaccggctcctgtgaaacgtgtgga  
gtcccacgcacggcctcggacactgacagcagttactgtatccctcctcagtaggcagatgacgccctccggagtaataacatttccaccgtgattgaa  
55 caagtgcggaagatgctagtctcaagattgctatgatattccagggacatttccgagcgatagatctagttccctggaaggcttccatagccagtatataa  
atcaaaagcgtgtgacagcgggaggtgtctcgggtgaagagctggatgagaactacgttccatgaaccccaactcggccctcgacaacattccggc  
agctttaccggaccaatccaggagccaaactatgtgccaatgaccccgaggacattgacttttctccttggaaatgcaagtcctcctcctgctcatatgg

5

SEO ID No.16

15

MSGGEVVCSGWLKSPPEKKLKRYAWKRRWFVLRSGRLTGDPDVLEYKNDHAKKPIRIIDLN  
LCQQVDAGLTFNKKEFENSIFYDINTIDRIFYLVADSEEDMNKWVRCICDICGFNPTEEDPVKPLT  
GSSQAPVDSFPAISATPASSQMEASSVALPPYQVISLPPHPTLGLQDDPDYLLINCQSCKKPEP  
NRTLFDASAKPTFSETDCNDNVPSHLYTPTASSQSKHGMNGFLQQQMMYDPPSRLTSVSGESSLYN  
20 LPRSYSHDVLPKESPSSTEADGELQTFNTPSGTAGVETQMRHVSISYDIPTTPGNTYQIPRTFPEST  
LGQSSKLDITPIDPPRPKPHPSHDRSPVETCGVPRTASDTSSYCIPPPVGMTSPRSNTISTVDLN  
KLKRDASSQDCYDIPRTFSDRSSSLEGFHSQYKIKSVLTAGGVSGEELDENYVPMNPNSPPRQH  
SGSFTEPIQEPNYVPMTPGTDFDSSFGMQVPPP AHMGFRSSPKTPRRRPVPVADCEPPPVDRNLKP  
DRKVKPAPLDIKPLSEWEELQAPVRSPTIRSFARDSSRFMSPRPDSVHSTTSSSDSHDSEENYVP  
25 MNPNLSGDKPLFNASNLGGSSPMNKGDQKQVEYLDLDDLDSGKSTPPRKQKSSGSGSSMADE  
RVDYVVVDQQKTLALKSTREAWMDGROSTSEITPKNVK

SEO ID No.17

30

gtcgcaccacgcgtccggcgccggctcgggtgtgtgacctcgagacggcgtcggccacacctgcctctctctggccggcggaatcctttgtct  
ctccgagcggcggaaggtcgcagagcaggcggcgccgtcggggacgcaaaccgccgctctcgtgacctcccagcctcggccaccgcagaac  
ttggctcgcagaagaccagcggaccgcgtccagctccagagccggttagtctccactgccagctgcctatgggcaagcagaacagcaagctgcgtcct  
35 gaggctgtcgacggacctcggggaacacacggaaattaccacgcatcagcttcaggagtggtaacaagggctcctcaaggactgcccaactggccacct  
gactgtgcgcgagtttcaagaagattcaccgaaatttcccctaccgcgatgcctccaaggctgcgaacacgtctccgcaccttcgacaccaacacgc  
gatggcaacctcgactccgggagttcatcattgctctgagtgtgacctcggggcaagctgggaacaacagtcgaagtggtgaccttagatctacgact  
ggacggcaatggctacatcacccgcagtgaaatctggagatagtcaggccactctacaagatggtgtctccgtgatgaagagcctgaggacgagt  
ccacgcccgagaagcgaaacagacaagatcttcaggcgagtgagacaaaacaatgatggaaactgtccctggaagaattcatcaagggtgccaaagag  
40 cgaccacttcagttgctgtgcagtgatccccgagtgctagccagttctgagggggaatggcctttggacatttgtagaaacacagccttggc  
ctgcactttcagcttggttglaaaagtgaattctccgtgatctctctcctcggacctgggtccaggcagcaatgcaccccttgacctggccca  
cttctgtgcttctctctccagtcaggctgtgcctctcctaagtgttcctgaagctgtctcctctccccagcaggggcctgcggccct  
taaggacaccagacaggacttttcagtaicttaacagaccagctaattattctatgatcccggtgactttgtaggatgaaaagatggagatgaca  
ggcaagcccttctgtgcatggctccacctccctgttcattttctcgacaaaagccgcttgcgatgatataccgtggtatccttacttttaatatagattatt  
45 gtagctgtgagatggactataatgttcagcccctgtatttaatgcctctgactgcctttgaagatgggtccctgtgacctgtgattccccccaccccaagct  
ggcgtgtgctgtgattatgattcatgattgcttgcctcagacagagatagatcgtcccgagggtgtggacatctgccctccgtctgtaaatgcagg  
gttttctgtctctcgtccctcctgtcagttgactggtcattacattaaaatgataaat

SEQ ID No.18

50 MGKQNSKLREPEVLQDLREHTEFTDHELQEWYKGLKDCPTGHLTVDEFKKIYANFFPYGDASK  
FAEHVFRTFTDNSDGTIDFREFTIALSVTSRGKLEQKLKWAFSMYDLDGNGYISSEMIEIVQAIY  
KMVSSVMKMPDESTPEKRTDKIFRQMDTNNDGKLSLEEFKGAKS DPSTVRLLOCDPSSASOF

55 SEO ID No.19

5 ggatgagacagaaggatagagaggaggagagagagagagaagaagcaaccagaaataggcagccaataaaaggagccgacttactga  
agcctcaaggccctgagccaggtccctgtttgatggcagttatgaaaaattacctcctcccgatcctggctctcctggcctactactatttataaa  
atgaagagtticagaccagaaatgctccagggaagaagagtgatgtcactggggccagcaaaaggattggaagagaatggcatatcatctgtcaaaa  
atgggagcccatgtgtgtactgcccaggtcggaggaggtctccagaaggtagtgtctcgtccttgaactcggagcagcctctgtcactacattg  
ctggcactatggaagacatgacatttgcggagcaatttattgtcaaggcgggaaagctcatggcgaggactggacatgcttatttaaacacatcactcag  
accticgctgtctcttccatgacacatccactctgtgcgaagatcatggaggcaactcctcagctacgtggcatgagcacagccgcttgcctatg  
ctgaagcagagcaatggcagcatgcccgtcatctccttggctgggaaaaatgccagcctatgattgctcctactctgaagcaagtgtctctggat  
gggttctttccaccattagaacagaaactctacataaccaagggtcaacgtgtccatcactctgtgtccttggcctatagacacagaaacagctatgaag  
gaaatctctgggataattgacccctgacttctcccaaggaggaggtgcgcctggagatcaaaaggcagagctctacgcaaaaggaggtgtactat  
10 gacaaattgccccttactccaatcctgttgggaaccagggaagagatcatggaattttttcattacgataataataaggacatgtttgaagtaactag  
gaactcctgagccctggtgagtggtcttagaacagtcctgcctcactctcagtaagccctaccacaaaaagtatcttccagagatacacaattttggggt  
acacctcatgagaaattcttgcaacactgacagtgaaatgtaattgtaataatgtcacaaaccactttgggctcaggtgtgaactgattgtaac  
tatggataaaacacatagtgggtgtatcggcttaccctcacactgaatgaacaatgataactaatgtaacattaaataataaaggtaatacactctgta  
aatgcaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa

15  
SEQ ID No.20

MAVMKNYLLPILVLSLAYYYYSTNEEFPEMLQGKKVIVTGASKGIGREMAHYLSKMGAAHVVL  
20 TARSEGLQKVSRCLLEGAASAHYIAGTMEDMTFAEQFIVKAGKLMGGDLMLILNHITQTSLS  
LFHDDIHSVRRVMEVNFLSYVVMSTAALPMLKQSNISIAVISSLAGKMTQPMIAPYSASKFALD  
GFFSTIRTEL YITKVNVSITLCVLGLDITETAMKEISGIDALASPKECALEIKGTALRKSEVYYD  
KLPLTPILLGNPGRKIMEFFSLRYYNKDMFVSN

25  
SEQ ID No.21

ggagatcagggccaccagagacagagatggagaccagcagcctgtggccccggaggccagcccccagtgaggcgtgagcctggaggcgcggct  
ggggtggacactcgcccttgggccaagggtgtgttaccgcgctctattcgtctccttcgcgcttggcacagccggcaatgcgtgtccgtgcacgtg  
gtgctgaagcgcggagcgggtcggccggcgctcgtaccacgtgctcagcctggcactgagccctgtgctactgtgatcagcgtgcccatt  
30 ggagctctacaactcgtgtgttccactacccctgggtcttggcgatcgtgctgtgtgctattacttctgctcggagctgtgctcagccacgggt  
gctgagcgtggccagcctgagcgcagagcgtgctggtggcgtgtgccagccgtgcgcggccgcccgtgctcaccggcgccgacctgccgct  
gctgtcactgtgtggtggtcctctgtggccttgcctgcccattgagcgttatcatggagacagaagcacgaaatggagaggccgacggggagcctg  
agcctgctcgcgtgtgtgcacgggtgtagtaagtcgccagctccagggttaccattccaggtgaaacgtgtgctgtccttctgttcccttgggaac  
tcactgctatttgaatgggacactgtcaaccacgtgtggcccttactccagggtaccatcagcttctgcccgaatgaactccatccccagccgctgg  
35 agctcctgagtggaaggcctcctgggcttcatcatgagagaagaccctctccctgggggtccaggccgttgagacacaggatgccag  
ccagatccgcagcctccagcacagcggcgggttctcagagccatggtgctgtgtatgtcacttgcgtgctgacctaccccgaggctcatgtac  
tgtcatatccccgatggatggactgatgagctctatgacttctatcatttctacatggtgaccaaacacgctcttctatgacgtcggcagtgacccc  
agtcctctacaatgccgtgtctcctcctcagaaagctcttctggaatctctcagttccctgtgtgtgaacagcgtcctggtgccccttaccacaagaag  
ccccagagtaactactagtagctacagtttccgcttggggatcccaagaacccccagcctgggtgaaatacaagtgtagagagaacaacaatgg  
40 ctgcttgggacacacccatcagataagccatgccattactaactgaagcggacactactgacccagcgcagtcattgacactgcatctcaggcga  
gccacgtaacacctcctgcccctcagcttccacctgtcaaccaagggtgtagaataaggacaaatgcctagtatgaagggtcccagtgccagcctgga  
cagaaccagtactccataattttgctggtgtctatttttaaaaaaaaaaaaaaaaaaaaaa

45  
SEQ ID No.22

METSSLWPPRPPSPSAGLSLEARLGVDTRLWAKVLFTALYSLIFALGTAGNALSVHVVLKARTGR  
PGRRLRYHVLSLALSALLLLISVPMELYNFVWSHYPWVFGDLGCRGYFYVRELCA YATVLSVAS  
LSAERCLAVCQPLRARLLTPRRTCRLSLVWVASLGLALPMAVIMGQKHMERADGEPEPASR  
VCTVLVSRASSRSTFQVKRAGLLRSPLWELTAILNGITVNHVALYSQVPSASAQVNSIPSRLLE  
50 SEEGLLGFTIWRKTLSLGVQASLVRHKDASQIRSLQHSAAQVLRATVAVYVICWLPYHARRLMYC  
YIPDDGWTDELYDFYHYFYMTNTLFYVSSAVTPVLVNAVSSSFRLKLFLESLSSLCGEQSRVVP  
PQEAPESTTSTYSFRLWGSPPNPSLGEIQV

55  
SEQ ID No.23

ggcgctcgccctgctcgccatggagaagaccgagctgatccagaaggccaagctggccgagcagggcgctacgacacatggccacctgc  
atgaaagccgtgacggagcagggcgccgagctgtccaacgaggagcgcaacctgctgctggcgctcaaaaacgtgtagggggccgaggtc  
cgcttgagggtcatctcagcattgagcagaagaccgacacctctgacaagaagttgcagctgatcaaggactatcgggagaaagtggagtcggag  
ctgaggctcatctgcaccacggctcctggaattgttgataagtatttaataagccaatgcaactaatccagagagtaaggctctctatctgaaaaatgaaggga  
5 gattatttccggtatcttgcgaagtagcttggcgatgatcgaacaacaatagaataatcccaaggagcctaccaagagcgcttgatataagcaag  
aaggagatgcagcctacgacccaatccgctggggctggctcttaactttctgtattttactatgagatcctaataatccagagctgcctgcacactggc  
taaaacggctttgataggccatcgagagcttgatacactgaacgaagactcccaaaagacagcacccctcatcgagttgcttagacaaactaa  
cattatggacatcagacagtgaggagaagaatgtgatgcagcagggggcgccgaaactaaacc

## 10 SEQ ID No. 24

MEKTELIQKAKLAEQAERYDDMATCMKA VTEQGAELSNEERNLLSVAYKNVVGGRSAWRVI  
SSIEQKTDTSDDKKLQLIKDYREKVESELRSICTTVLELLDKYLIANATNPESKVFYLYLKMKGDYFR  
YLAEVACGDDRKQTIENSQGA YQEA FDISKKEMQPTHPRLGLALNFSVFYYEILNPNELACTLA  
15 KTA FDEAIAELDTLNEDSYKDSLIMQLLRDNLTLWTSDSAGEECDAAEGAEN

## SEQ ID No.25

20 tttttttttttttccatccctgctggctttattactggcgagggaacagatccttggcagtggttaggactgaggtacaagagttggaagccctggg  
gctcagcttactagcaggggtgggcacactagcaagtgcagagaggagcctgtatatgtcaacccacggagaaatatactcatgcagccgtt  
cattatggctatgtagcaggacaggtgtgcggctcatggcgagaagcccaagctggatccccaccgcccggataaagcgctgtcagtggcagc  
aggaagatctctggctccagagtgaggttcattgcttgcaggctccgctgaagctgccaccaggatctgaatcatcctgggtgtcattcaggc  
25 tctgtaaacttctga

## SEQ ID No.26

gccaatcattcttattccttcatctctgctcctgccaacactagtgaaacacacaccttggctcattaaggaagtacatgcagatgagcaactagtaga  
aacatcattcacacactctttcaggtgttctccgggtgcacactcacacaggttgcacatactataagcctgaataatgatgccattatctgcacagggt  
30 aaaactgattccatactggtgcaacctgggtggaagcttcaggacacttaacaaaattatctgattattcattttctagatttgggatgaaaaatagaaaag  
aatataacaaaagcatgctttttgaggtttctgggtcagttagtagaaaaataggtgtttcttgagaggttttttaattgttatcttatttttaagtggag  
aactgtgaaactggaattcctgaggtttttttccctcactcatgcttttaagagagtggttaggctttgagcagctccctgttgacaaagtctgtttcttaa  
actgagccttctataggcgtgatgcagctctgtatgtcccacagagagtaaaggaggacagaagctgcttgccttngtgggcatagcctttccc  
35 tatgctgatgcatattttctgcaaaacctcgggtccagagggtcgtgcattctggtactatttgcattaaatgttcaac

## SEQ ID No.27

gtgacaggagcctccccacccatattctaagctttatcttctagtagcctgagggctggagagaggtatttctgccggattgtgcatctggagtcgt  
40 tctgtggcctccttttctctggttttgcatttttcttggtccgatgaagcatttcttttaaccaataaagtgccttccagcaatgg

## SEQ ID No.28

agcaatgaatgtggaacatgaagtaaacctcctgggtgaggaaattcatgcctgggtccagaaatgctgatgaaaaatgaagtgaagtttgggtcct  
cttcaggatgacagatgtgccaatctttgaagcgttgtaggaactctgaaagctgcaaacgaaggagattgtacatcagcaggggaactactttt  
45 gcaagggtgtcatgatgatgtgacattgtatgtcgaagattaatgtggttgcatggcttgggtatctgataaactggaataactaagtttaagagactagc  
gtgaattccttatgtattttatagaactttgtaacaaagggggcctgttgagaagctcgtttttataccctgaagcaaacattacaatgtaaatgagac  
aaacctatttttcttaagaaggttaatttgggaatgtaggtaatgaacatttttggagggtgaaaaagc

## SEQ ID No.29

50 atgggtgcatgtgtgttgcagctcactgtccatgagaatatattatgataaagaaaacctttgaaatggctgctttcaagaagataattcatgcttct  
cattttcagctcttcaaaagtgtggctggcctgtttatgactgcagagttgttatgttttttaatttgaatttgccttaataagataggcaaaccttgagatt  
atgatgttgcctggcacagactgtattaaacaacactcccgtga

## 55 SEQ ID No.30

ctggcacggacatggctgtcttctgtctgtgtgtggaaacgtttcaggcacaaagcgactccagcagcacatggagggtccacgcaggcgtgcgc  
agctatatattgcagtgagtgcaaccgcaccttccccagccacacggctctcaagcgccaccttgcctcacatacaggttttttctccatgtgtccaaagt  
aagtttgccttctatagcaagagaatatttttacctactaacaagtagatttttttagtgaacatttttttattttatataagtcataaagaaaaata  
gcgatgttcagttgataaccttgaatctgcagttagaagagaataaagttaactc

5

SEQ ID No.31

tttttttttttttcaagagtaaaagtcttaatttactgtcacctcagaaggtacaagtaaaatgtttgaagaatatacacaagaattcagagtataaaa  
tttccatgtaattagtagtcatattaatatagaactacagtagaataaaatagctgtctcctagattctccaggagcctaactgtgtggttggagaaggtg  
gagttgttctgagtgagcgggaagtcaagctcactctccagttctccagcagctccacgaagtcagtgatgtaccacttggcgtgttcttaacctgtg  
cctgatcacattgcctccaaagccaatgaagcatcag

10

SEQ ID No.32

ggggcgggacgacggcggcgctgcccggcgactagccggcttgcggcgctgccagtctccggcggcggtgtccggcgcgcggtgagcgac  
cgagcgtgcggacggagcggcgccctgctggcgggcgtgagcggcgcgcgcgcgcgaggagagacggcgagcgaggagcggcgcgcgcg  
gacgcggcgacaggttcttacttacaaggacaatgactactgagggcaccagtaacaatggagagaaccagcagccaccatgactgagcag  
ggtgaaatatacactacgaagaagacagaggagtataaagattgtcaaaagagtggggactagtacgagggcccaatgtttggtaaaagtattg  
tccactacaaagggatgtgtcagatggaagaaagtttgattccagtcagacagaagaagccatttgccttagccttggccaaggccaggttatcaaa  
gcctgggacattgggggtgtctactatgaagaagggcagatctgccatttattgtaaccagaatatgcttatggctcggctggccacctccaaaaaatt  
ccatcaaatgcaactctctttttgagattgagctccttgatttcaaaaggtgaggattatttgaagattcaggcgttatccgtaaatcaaacggaaagcga  
gggalaactcaaaacgaaggaacgggtaaaagtcacctgggaagcgtgctgtgtggaaggacatttgattgccgagatgtgtgttctgtgtt  
ggggaaaggagaagaccacgacattccgattgggatcgacaagccctgggtgaagatgcagagagaagaacagtgtatctatatttggaccacgctat  
ggttttggagaagccgggaagcctaagtttggcattgaccccaatgctgagcttatgtacgaggtcaccttgaagagcttcgagaaggccaagaatcttg  
ggagatggacaccaaaagaaagctgacgcaggctgccatctgtaagagaagggaaactgtgtacttcaagggaaggaacgtacagcaggccgtgat  
tcagtacaggaagatagtgctcctggctggagatggaatagcggcctgtcagagaaggagtcacaagccctcagagtcgttctcctcgcagccttctgaac  
ctggccatgtgctacctgaagctccgagagtaacaagccgtggagtgctgcgacaagggccttggactggacagtgccaatgagaagagcttga  
cagaaggggcgaggccagctgctcatgaatgacttggatcgccaaaggcgacttcgagaaggttggcagtaaatctcagaacaaggccgctc  
gcctgcagatctccatgtgcccagaggaaggcgaaggagcacaacgagcgggaccgaggggtgtacgccaacatgttcaagaagttcgagagcggg  
acgcaaaagggaagccagcaaaagctgggagcaagaaggctgtgaaggagccgctggcgaacaacacgagagtcaggccatggaagaaggaa  
aggccaaggccatgtatgacgtgcgcccagggaggaagagagtcctaataaactggccctctcgtgggctcgcctccaactcaggactgaac  
agtgtttagttaagggtttgttacgtctctgtgattctggaagcaaatggcataccagtagcttcccaatgaccacctgctgctgggggggtgggggt  
gggggacatgccaggaacagcagagaaggccgctggtgtgaagagaccaggccagcagctcagcccaatttcagttgtacaccttcagtgctc  
cagcacagcatccctgtgaacctagggcccgactgctgtgggttctacatcggcactagggtcacactgcagaacacgttgataaaacaaactcagtgat  
ctctcttcttattgtgggcatggcagggcggggtgatgagatttcttagcactgactgactggcctgtaagaacacaaagccacagccagggggt  
ccctgttccacagctgggtctcagggcccttacctgcttccaaagtcctttcgcagactctgagtggtgttcttcttctgacagcatgtccacagactc  
tgttgttctccaacgccgtcattagtagacagcttctctgagtttctgtgtgtggagagtggttagaagtaggtttatcttcccgctgtctgccccactc  
aagacgat

15

20

25

30

35

40

SEQ ID No.33

MTTDEGTSNNGENPAATMTEQGEDITTKKDRGVLKIVKRVGTSDEAPMFGDKVYVHYKGMLS  
DGKKFDSSHDRKKPFAFSLGQGQVIKAWDIGVSTMKKGEICHLCKPEYAYGSAGHLQKIPNSA  
TLFFEIILLDFKGEDLFEDSGVIRRIKRGEGYSNPNEGATVKVHLEGGCCGGRTFADGVVVG  
EGEDHDIPIDKALVKMQREEQCILYLGPYVGFGEAGKPKFGIDPNAELMYEVTLSFEKAKES  
WEMDTKEKLTQAIVKEKGTVYFKGGKYTQA VIQYRKIVSWLEMEYGLSEKESKASESFLAA  
FLNLAMCYLKLREYNKA VECCDKALGLDSANEKGLYRRGEAQLLMNDFESA KGFDEKVLAVN  
PQNRAARLQISMCRKAKEHNERDRRVYANMFKKFAERDAKEEASKAGSKKAVEGAAGKQHE  
SQAMEEGKAKGHV

50

SEQ ID No.34

atggcgtgttcaggctgatgctggcagcttgcctctctgtgatccctctaattgtatggcgactgcctgtccctgtgtccctgtgtcagtgaggattc  
aggatggggcccggtccatcaacccctgatttgcctcctggagtccagacctgggtgccccctcagaggagtgaggagacatgccgggcttctca  
cttttctacccctgacggctctggtcctggcaagggatgacttggaaagtaggggttcttggaaagggcatcagtgccatgccaaagcttctgaa  
cccgtcctgaaggagctggagaagccgactccttaccagctccagaggaaaagttcaggggctctccagcagcttggcaacggaaaagaatc

55



tgagctggcgggtgctgaccggatgaatgatgaagccgcacagggcgaccgtccatttaagaggagacttgagaaaacaggccaaacgctatg  
gcggctttttcgcaaatccccaagaggaggtccgagatggccgggatgaggacggggccaggatgggatcaggtagggcatgaggacctgt  
acaaacgctatgggggtctctgcggcgcttcgccccaaagctgaagtgggacaaccagaagcgctatgggtttcctgcggcgctcagttcaaggtgg  
tgacgcgggtcccaggagaacccaatattctgaagattagatgttga

5

SEQ ID No.35

MAWSRLMLAACL VMPSPVMADCLSLCSLCAVRIQDGRPINPLICSLECQDLVPPSEEWETCR  
GFSSFLTLTVSGLRGKDDLEDEVALEEGISAHAKLLEPVLKELEKSRLTTSVPPEEKFRGLSSSFGN  
GKESELAGADRMNDEAAQGRTVHFNEEDLRKQAKRYGGFLRKYPKRSEMARDEDDGGQDGD  
QVGHEDLKYRYGGFLRRIRPKLKWDNQKRYGGFLRRQFKVVTRSQENPNNTYSEDLDV

10

SEQ ID No.36

15

gacaggcgccctcggaaggacaggatgtcatcaggaaaacaggactccccgtgggaagataggatactccaggagaagatagaatgtcccaggca  
tcactagaacagcaggaaacactagggtccaaagctctcattgaggcaccggggagggtgtgtgggtgtggcgccctcaggaaaagactgtccctgt  
ggctctgatccacgaccccccacggcaagggtctcttaagagaacctgttcagagacagaacgggtccctacaggcgcttcttctctctacagcc  
catggcgcggttctcagggtttgcacctggctgctggcgcttgggtcctcctcctgctacagtgcaggcggaatgcagccaggactgcgctaagt  
cacgtaccgctgtgtcggccagggcgacatcaatttctggcggtgcacactggaatgtgaaggtcagctgccttcttcaaaatctgggagacctgcaag  
gatctcctgcagggtgtccaggcccgagttccctgggataacatcgacatgtacaagacagcagcaaacaggatgagagccacttgcagccaagaa  
gtacggagggttcagaaacgggtacggaggttcagaaagatggagagctatatccatggagccagaagaagaagcgaacggaggagagat  
ccttccaaaggatgtggcggttcagaaagggatgcagatgaggagacaccttggccaactcctccgatctgtgaagagctactgggaacgg  
gagacaacgtgcgaagacagccaccaacaagagagcaccacaatgacgaagacatgagcagcaagaggtatgggggttcagagaagcctc  
25 aaaaagaagcccccaactggagatgaagcaaaagagctgcagaagcgctacgggggttcagagaaggggtggagcggcgagtggtggaagg  
ctaccagaagaggtatgggggttctgaagcgcttctgagtcctcctccgatgaagaaggcgaaaattactgaaagaagttctgagatagag  
aaaagatacgggggtttatgcgggttcgaagccctttccagcagtgaccccgacccccactagcctgtccatcccccatgagcaactgccttgcata  
gatgttcttgcacatgctgttctgtgtcagtgccccgtgtctagataactacatgcctgaaagctgtgattttagggtctgtgtcttcttgcattt  
aagctcagatgggtctcttctgtatgtgttatcaatagttgttacctcctcctgacgaaacatcaataaagcttattgtatataataataaaaccc  
30 gtgacccaactgc

25

30

SEQ ID No.37

MARFLRLCTWLLALGSCLLATVQAECSDCAKCTYRLVRPGDINFLACTLECEGQLPSFKIWET  
CKDLLQVSRPEFPWDNIDMYKSSKQDESHLLAKKYGGFMKRYGGFMKMDLEYMPFEEEE  
35 NGGEILAKRYGGFMKKDADEGDTLANSSDLLKELLGTGDNRAKDSHQQUESTNDEDMSSKRY  
GGFMRLKRSFQLEDEAKELQKRYGGFMRRVGRPEWWMQYQKRYGGFLKRFASLPSDEEGE  
NYSKEVPEIEKRYGGFMRF

35

40

SEQ ID No.38

accacgcgtccggccggttactgctccctcagtccttttgggtcttccgggcatcgggacgatgacctcaaaagcgaggctgctcgaagcac  
ccttacctactccagaatgaggggaatgtagcattctcctcgtttatgaacagagaaggatgggctgaacgattttatcagaagattgccagcaa  
cacctatgcatgcaaacacgctgaagtcagtcctatttgaatgtccatcctcaggagccggagcttatgaacgtaacccctcctccgccaagtc  
45 cctctcaaaaatcaacctgggtccgtccccaacctcacgcaaaacctccgacttctcttgaagtgatcggaaggcgagtttggaaagggttc  
ttctggctaggcacaaggcagaagaagtattctatgcagtcgaagttttacagaagaagccatcctgaagaagaaggagagaagcatattatgcaga  
gcggaatgttctgtgaagaatgtgaagcacccttctgtgtggcctcacttctcattccagaccgtgacaaaactctacttctcctggactacattaatg  
gtggagagctgttctacatctccagaggagcgctgtctcctggaaccacgggctcgattctacgcagctgaatagccagtgcttgggtctgc  
50 ctccctaaacatcgittatagagacttaaaacctgagaatattctcctagactccaggggcacatcgctcactgacttgggtctgcaaaagagaatatt  
gagcataacgggacaacatctaccttctgtgcagcgctgagtatctggtcctgaggtctccataagcagccgtatgacccggagcgtgactgtgtg  
gtcttgggggtgtctgtatgagatgctctacggcctccccgtttatagccggaacacggctgagatgtacgacaatattctgaacaagcctctccagt  
tgaaaccaaattattacaactcggaaggcactcctggaagccctcctgcagaaggaccggaccaagaggctgggtgccaaaggatgactttatggag  
atlaagatcatatttcttctttaaataactgggatgatctcaataagaagattacacccattaaaccaaattgagtgggccagtgaccttcgg  
55 cacttgatcccaggtttaccgaggagccgggtccccagctccatcggaaggtccccgcagcatcctgttcacggccagtggtgaaggagcagcagaa  
gccttctcgggtctcctatgacactcctgtggttctcctctgagtgctcctccggatgttctgaaggacttctcaggttctcctaaagtgttcttctac  
ccttgggtgaggttgccagctgacagaacattttaaagaatttgcacacctgggaagcttggcagctcgcctgccccggcggtggcgacgcagcgcg

45

50

55

5 cgcgtcgtgatgggagctttccgaagagcacacccctcctcaatgagctgtgaggctcttcttctcttcccaacgtggctgtagctccaggcgag  
cgagcgtgagagtgcccgctgagacagacaccttggtctcagttagaaggaagatgcaggcttaagaggaaaccccgagctgtctgagctgtgatca  
agaatattctgcaatgtgctttctgagatcgtgttagctccaaagcttttctatcgacagtggttcagttgtgtttgtttgtttgttttcccttg  
gcggatttcccggtgtgagtgccgtgagtgctatgctgacacagcgggtttgtgtgagcatcaatgtgacactgcaggacactacaatgtggg  
acattgttttctccacatttggagataaattatgtgtagactgtttgttaagatatgttaataactaaacatttgaacggcttgcaatgacgagcat  
tcagatgcttaaggaaagcattgctgctacaataatttctattttagaaggggttttttgaccaatgcccgagttgcagtaaacggctgtgtttcattg  
tttaaatgtcactataaaacgggcattattatgttttttcccttcttctatcttctgacacctgattattgtatgtatcgtgtaaaggagctgtacattgg  
gttataacactagataattaaactacaggcttattgttaaacatcattttaatgtactgtaattacatgggttataatgtacaattcctccttaccacaca  
actttttgtgtcgataaaccaatttgggttgaataaattctgaaacct

10

SEQ ID No.39

15 MTVKAEAAARSTLYSRMRGMVAILAFMKQRRMGLNDFIQKIASNTYACKHAEVQSILKMSHP  
QEPPELMNANPSPPPSPSQQINLGSSNPHAKPSDFHFLK VIGKGSFGK VLLARHKAEEVFYAVKV.  
LQKKAILKKKEEKHIMSERNVLLKNVKHPFLVGLHFSFQTADKLYFVL DYINGGELFYHLQRER  
CFLEPRARFYAAEIASALGYLHSLNIVYRDLKPENILDSQGHIVLTDGFLCKENIEHNGTTSTFCG  
TPEYLAPEVLHKQPYDRTVDWWCLGAVLYEMLYGLPPFYSRNTAEMYDNILNKPLQLKPNITN  
SARHLEGLLQKDRTKRLGAKDDFMEIKSHIFFSLINWDDLINKKITPPFNPVSGPSDLRHFDP  
20 FTEEPVPSSIGRSPDSILVTASVKEAAEAFLGFSYAPPVDSFL

20

SEQ ID No.40

25 gaagcagaagagggaacgaggggtgagcagcgtggcagccgtgctgcgctcctctctgcgccacaggctcgcccaacgaagcacaagccag  
cagggctcgggtcctgaggacatcgtgccaccaggagtgacagagaaccaaccacagaatctggaggtcggtagccccagcttaggagcgt  
cggagccaggggggtgccgaggaagaccggaagcagatcccagacttgaaaggagaagagagtgatccctgagccggcagctctcag  
cccagagctcccagatctcctgtagctggcttccgccggagcgcagccccccttagcttccacacctctcctctgagcgccctctatctgc  
ccctggaggagctttcaccttcaaaagggtcaggaagaaagccgcatatctggcggccaccatgcacctcaacagctccgtgcagcaggagccccagt  
gaacccgggtgccagcccttccacatccacagttcggactggagacgatgctcctggcgtcagcttgagcaatggttctggcaattcctcagaatcca  
30 tctggagcccaacagcaacctggagctgaacactgacattattccaagggtgctggtagccgtgtatctggtgagcactgtggc  
aactcggtagacagccttactctagcgcggaagagtcgctgcagagcctgcagagcactgtgcattaccacctggtagcctggcactgtctgacctg  
ctcatcctgctgctggcatgcccgtggagctgtacaacttactctgggtgcaccatccctgggcttgggagtgctggctggcgtgctactattctg  
cgagatgctgcacatgcccagccctcaatgtagccagcctgagtgaggcgtacttggccatctgccccttcaaggccaagccctcatgt  
cccgagcccgaccagaagaattcatcagtgccatagctagcctcggcgtcgtgctgacccatgcttttaccatgggctgcagaaccgagctgc  
35 cgatggccagcaccctgggtgctggtgacacccacggggagacagccagcgtcaaggtcgtatccaggttaacaccttactctctctgttc  
ccatgctgatcttccatcctaaccactgtgatgccaacaactgaccgtcagtggtgcaccaggctgcgagcagggccgtgtgtgtgcaccgtgg  
gcacccacaacagtttagacagcagcgttcaacatgtccatgcagccagccgtgtccagccctgcgcatggagtcctctgtctacgtgtgtgt  
aatcgcccttgggtgctggtgctgcccctaccagctgcggcgcctatgtctgctatctcagatgaacagtgagctacgttctctctgacacttaccact  
atttctatagctgaccaacgctctcttctacgtcagctcagccatcaatccatccttacaacctcgtctccgcaacttccgccaggttcttctccacac  
40 tggcttgcctctgctcgtgggtggcggcggcggcgaagagagggccaacgttctccagggaagccaacagcatgtccagcaacctgcgttttccacca  
gcgcccccgggaacccctgactagccatgagggagtagcctgtgcacaggcgcaactcccccaaccccccccccccccaagcctccc  
aagggttaagtagtgcccatctaagccatgccggtgaggggtgggcacccctcagcggaggttcttcttccagtttcttcttcccttctctgttctc  
ccctccctagctcttatttctgcccccttaccctctctacctccaccttataaaacagaaaaggagcggttctcctgcccctacaaaaggcctttaaaca  
gaagaattagcactcaccaaggacggtctccttcttccagactaatgtagtittagaagcaagaatgaagcaccacattgggctggacagatg  
45 agctgtgttaaccataacagcacccttggaaactgcactggcagggcgagacagtgctgtgtgtgagcttgggttcagagacacagcctcctcagccc  
ctttatgcttactcctgcccgtgtccagagataccatagcacttctgagccttatgtccagacccttcttggcagggctgtacactgcccctccaga  
gtgttccagagaagccccaaattactgtgtaggtccagggccacagctggaagctgtgggaatccatgccacacctggatgctatggccacta  
aagagaccccaattccacatgccaggaaggataaaagggtgctggaalcaacacagagcaagcttcaagttggcttgcaggggaccttacc  
50 tcttggatctgcagaaggatggaagataagtggtggtccagcctccccagtcagggtggttctgtgggacatgcatgttctcgtctcatatagatg  
tatagactaaggtctgacagcagctggtcctcagctgggacttctgagaaggggactgagccaggtctctcagcaagatgccagtgtctgagactccac  
aggttaaggggaggccaagcaccacagcatagctggccagcagccctgagctgagctatgtcaatttgaaccagccgccaagcagccacct  
ggccaggttctaggcgtggaagagcagggcacccttctcttggagctgtctccaacaagacagggccattcagcctccagccaacaagctgg  
ctgggactgtgagacagctccaggtgcatcaccacaaggtagaagtagcaggagagtaagtgatgcttttgcaaaagagccttagctctgtt  
gtctgggagagagatggctggacatgcagctgctctgtaaggtgaattgccacgggacatgggaggtcagtcacagccaggtgacctgtctc  
55 cctctgaactataaaacaaatgggtgaaaagtcagggtatctgtgtgttcacccagagaatggggaggggttcaagtacttgaaccccaaaaactgct  
actagtaattgattcctcagggcatcaaggacagcctgggtgagtcggatccgagcaggtgacacaggaagatgtgacacccaagagggaagcc  
ccctccttaagaaatgtctgcatgggagccctcagaccaccttggcagtgagtggtgcaaggctagcgggtgcatgaggtttgacttagact

caagccaggcagcccagccccaggactctaccctgggtttctagaccttaagccattctctgagccttgatttcctcatctcggcggaccgggactgtctt  
gaaggactcagcctggagtacacagaagtgggacacctgaggctggtagaccaatgccctcttaccatgattcctcagaaatgtggtggcctcattata  
ggggtggtccaggcagtcaccagaagtctctgctgtagctatagcatctgtctgtgcttgggttaattaggacatacatccatgcaccaccagacac  
5 accttgaccctggctgggtatcctatgctctggccaagtgaagatgaaatagttctggaggctgtcctgagcatcctggctagagtctcatgagccca  
gtcgtgatgtggaacaagtcgtgtgccccaaatatctgtcagaatgccaccacccctccacacttcaataaagaacaccctcctcatatgtctcaataaa  
gaataaaggagctgttatatcg

SEQ ID No.41

10 MHLNSSVQQGAPSEPGAQPPHPQFGLETMLLALSLSNGSGNSSESILEPNSNLDVNTDIYSKVLV  
TAVYLALFVVGTVGNSVTAFTLARKKSLQSLQSTVHYHLGSLALSDLLILLAMPVELYNFTWV  
HHPWAFGDAGCRGYYFLRDACTYATALNVASLSVERYLAICHPFKAKTLMRSRRTKKFISAIWL  
ASALLAVPMLFTMGLQNRSDGQHPGGLVCTPTVDTATVKVVIQVNTFMSFLFPMLIISILNTVI  
15 ANKLTVMVHQAAEQGRGVCTVGTHNSLEHSTFNMSIEPGRVQALRHGVLVLRVAVIAFVVCW  
LPYHVRRLMFCYISDEQWTTFLFDYHYFYMLTNALFYVSSAINPILYNLVSANFRQVFLSTLAC  
LCPGWRRRRKKRPTFSRKPNMSSNHAFTSATRETLY